Message

**From:** MHealy [mitchellhealy@yahoo.com]
**Sent:** 6/8/2020 8:37:14 PM
**To:** Parrish, George [Parrish.George@epa.gov]; Pierce, Maggie [Pierce.Maggie@epa.gov]
**CC:** inperce@ftbelknap.org; Bleiler, Justin [Bleiler.Justin@epa.gov]
**Subject:** Re: FBIC TWQS Revisions to Criteria Tables
**Attachments:** FBIC_A-1_Numeric Criteria-HH.R1.docx; FBIC_A-2_Numeric Criteria-AL.R1.docx

Hello Maggie and George:

I apologize it has taken me since February to get time to try to resolve the comments of the Criteria Tables that Maggie reviewed. I did make the changes we talked about in our last meeting we had and I've also included some additional comments as well. I'm still working on George's comments and will submit an updated revision when done.

Attached is Appendix A-1 and A-2: Human Health and Aquatic Life Criteria Tables. I combined the Organoleptic Effects Criteria to the Human Health Criteria Table.

I hope you have been safe and look forward to your response.

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On Thursday, February 13, 2020, 01:38:16 PM MST, Pierce, Maggie <pierce.maggie@epa.gov> wrote:

Hi Everyone, Thanks for your time yesterday. We covered a lot so please don't hesitate to let me know of any follow-up questions. Here are the follow-up items I noted for myself.

- The 2013 ammonia equations in the table below. You'll see the acute criterion varies with whether trout are present or absent. A lot of tribes and states apply Onchorhyncus absent to warmwater aquatic life streams and Onchorhyncus present to coldwater aquatic life streams. Hopefully, you can copy and paste from this email – let me know if not.

| | |
|---|---|
| Ammonia, 30-day average | |
| Acute, 1-hour average, *Oncorhyncus* absent | 0.7249*((0.0114/1+(POWER(10, 7.204-pH))+(1.6181/(1+POWER(10, pH-7.204))*MINIMUM(51.93, 23.12*(POWER(10, 0.036*(20-TEMP))) |
| Acute, 1-hour average, *Oncorhyncus* present | MINIMUM((0.275/(1+(POWER(10, 7.204-pH))+(39/(1+POWER(10, pH-7.204)) |

| | |
|---|---|
| Chronic, 30-day rolling average* | 0.8876((0.0278/(1+(10(POWER(7.688-pH))+(1.1994/(1+10(POWER(pH-7.688))*(2.216*10(POWER(0.028*(20-MAXIMUM(TEMP, 7))) |

* not to exceed 2.5 times the chronic as a 4-day average within 30 days

- Aluminum criteria – we have a few draft implementation options for you to consider. Here is a snip of the table with the four options. I recommend number 1 (both the calculator by reference and the lookup tables) if you think that will work for Ft Belknap. You may want to check in with your attorney about incorporating the calculator by reference if you're not certain.

| Approach to adopting the recommended criteria | Advantages | Potential Challenges |
|---|---|---|
| (1) adopting the applicable sections of the 304(a) criteria document (which includes the criteria value calculator and criteria value lookup tables). | This approach may provide the greatest amount of background information and context for the criteria and may also provide the greatest flexibility to states and authorized tribes because it allows multiple ways to calculate criteria values. | This approach may be difficult to implement due to individual states' or authorized tribes' legal and administrative requirements (e.g., whether a state's or tribe's regulations allow them to use incorporation by reference). |
| (2) adopting the aluminum criteria calculator [V2.0] (or similar method to calculate outputs based on the underlying M&R model equations). | This is likely the most adaptable and concise approach. Future updates to the criteria value calculator would likely be accompanied by guidance. | The calculator may be viewed as a "black box," compared to the lookup tables that might be more familiar to some users. Future versions of the calculator may require the state or authorized tribe to update their standards to incorporate the revised calculator by reference. |
| (3) adopting the criteria value lookup tables. | This may be more transparent than adopting only the criteria value calculator because the lookup tables do not require access to a computer. The tables are included in Appendix K of the publicly-available criteria document and may be helpful when communicating to the public about the criteria implemented at a given site. | The state or authorized tribe may need to develop a standard procedure to determine which values for pH, total hardness, or DOC to use if measured values are between the range of input parameter values provided in the lookup table. For example, a state or authorized tribe may decide to always use the nearest value in the table for each input parameter or may decide to use the value which would yield the most protective criteria. |
| (4) adopting relevant ecoregional[13] criteria default values. | This would allow states and authorized tribes to apply consistent criteria throughout an ecoregion. This approach does not require a state to identify site-specific input parameters because the criteria values are the same for all sites within the ecoregion, calculated based on representative water quality parameters. Defaults may also help to increase transparency of criteria for the public if they are adequately explained. This approach may be used in combination with the criteria calculator or lookup tables, for example as backup criteria for waterbodies with insufficient input parameters. | This approach may be too general for areas with complex geology. That is, the approach, used without the calculator or lookup tables, does not allow for the use of site-specific ambient data (input parameters for a specific site of interest) even though there may be site-specific exceptions within a region. |

-----Original Appointment-----
**From:** Pierce, Maggie
**Sent:** Monday, February 10, 2020 7:01 AM
**To:** Pierce, Maggie; mitchellhealy@yahoo.com; Parrish, George; Bleiler, Justin; inperce@ftbelknap.org
**Subject:** TWQS check-in
**When:** Wednesday, February 12, 2020 2:00 PM-3:00 PM (UTC-07:00) Mountain Time (US & Canada).
**Where:** 202-991-0477; passcode: 9067485; PIN: 97182

Reserved the Onyx Room (5th floor) for R8ers.

This is time to discuss the attached.